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(54) **PIEZOELECTRIC ENERGY HARVESTER
HAVING PLANFORM-TAPERED
INTERDIGITATED BEAMS**

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(58) **Field of Classification Search** **310/329-332,**
310/339

See application file for complete search history.

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(57) **ABSTRACT**

Embodiments of energy harvesters have a plurality of piezo-
electric planform-tapered, interdigitated cantilevered beams
anchored to a common frame. The plurality of beams can be
arranged as two or more sets of beams with each set sharing
a common sense mass affixed to their free ends. Each set thus
defined being capable of motion independent of any other set
of beams. Each beam can comprise a unimorph or bimorph
piezoelectric configuration bonded to a conductive or non-
conductive supporting layer and provided with electrical con-
tacts to the active piezoelectric elements for collecting strain
induced charge (i.e. energy). The beams are planform tapered
along the entirety or a portion of their length thereby increas-
ing the effective stress level and power output of each piezo-
electric element, and are interdigitated by sets to increase the
power output per unit volume of a harvester thus produced.

23 Claims, 8 Drawing Sheets

